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ABSTRACT

A workshop attended by faculty members from three Florida junior colleges and one university was held in response to legislation requiring students to demonstrate minimum communications and computation skills before entering upper division programs. General conclusions reached during the workshop focused on the value of competency testing in creating a positive relation between the public and higher education; the possible negative effects of testing, such as the lowering of teacher expectations and of student aspirations; the advantages of criterion-referenced tests over norm-referenced tests; and the possibility that students may fail the competencies test after having passed beginning level communications and math courses. Communications skills that were emphasized included competencies in percentages, word problems, averages, interest, discounts, taxes, linear equations, graphs, integers, decimals, fractions, and equivalencies. Suggested communications skills included competencies in paragraph development, sentence structure, punctuation, and spelling. The workshop participants also recommended that: (1) upper-level competencies not exceed high school competencies, (2) basic skills competencies be common to all programs, (3) no distinction be made between entrance and exit competencies, (4) competencies be standardized throughout the state, (5) remediation be available, and (6) minimum competencies be a requirement for associate degrees. (JP)

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COMMUNICATION AND COMPUTATION SKILLS

necessary to the upper-division

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a report

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PENSACOLA JUNIOR COLLEGE

COMMUNICATION
AND
COMPUTATION SKILLS
FOR THE UPPER-DIVISION

Edited by Noojin Walker

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PENSACOLA JUNIOR COLLEGE
AN EQUAL OPPORTUNITY INSTITUTION

CONTENTS

INTRODUCTION	1
PROJECT MEMBERSHIP	4
PROCEDURE	5
GENERAL CONCLUSIONS	7
RECOMMENDATIONS	15

INTRODUCTION

The 1979 Florida Legislature enacted a law with the purpose of giving greater assurance that students who enter the university upper division would have a reasonable probability of success. Pertinent portions of that action are as follows:

248.028 Universities: admissions of students.

(5) Rules of the Board of Regents, when approved by the State Board of Education, may require the use of scores on tests of college-level communications and computation skills provided in §229.551 as a condition of eligibility for consideration for admission to upper-division instructional programs of students for community colleges, including those who have been awarded associate degrees, provided that such requirement extends to students enrolled in lower divisions in the State University System and to transfers from other colleges and universities and provided, further, that any cutoff scores required for eligibility for consideration relate to successful student performance in programs to which the scores apply and are filed with the Articulation Coordinating Committee.

248.066 Minimum standards, definitions and guidelines for community colleges.

(3) Program offerings and classification including college-level communication and computation skills associated with successful

performance in college, with tests and other assessment procedures which measure student achievement of those skills. It should be provided that students moving from one level of education to the next acquire the necessary competencies for that level.

248.064 Community college board of trustees: duties and powers.

(p) The board of trustees shall provide admissions counseling to all students entering college credit programs, which counseling shall utilize tests designated by the Articulation Coordinating Committee to measure achievement of college-level communication and computation competencies by all students entering college credit programs.

(q) The board of trustees may limit students whose level of achievement of communication and computation skills is below that defined by the college as required for successful performance in a college credit program to compensatory courses and any other instruction for which they are adequately prepared.

The Division of Community Colleges, State Department of Education, received a proposal from the Pensacola Junior College to "Demonstrate Procedures for Reaching Agreement with Upper Division Faculties Concerning Levels of Communications and Computational Competencies Associated with Successful Student Performance." The Division subsequently contracted with the District Board of Trustees of Pensacola Junior College to provide the following services:

1. Describe procedures which a community college can use to reach agreement with upper-division university faculty members concerning levels of communications and computational competencies associated with successful student performance in upper-division baccalaureate instructional programs.

2. Demonstrate the procedures through use with one or more state universities with upper-division programs.

3. File with the Department of Education a report which contains (a) an assessment of the procedures used and (b) a display of such communications and computational skills agreed upon by the Contractor and the university(ies) involved in the project.

This document is the report to the Division of Community Colleges.

Noojin Walker
Vice President for Academic Affairs
Pensacola Junior College
November 1, 1979

PROJECT MEMBERSHIP

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Lewis Baber, Associate Dean of Instruction
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Bill Hamill, Business
Cordell Henry, Mathematics/Science
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PROCEDURE

The participants in the project were a group of faculty selected from the three regional junior colleges and the upper-level university. The participants were recommended by the academic dean of each institution and represented a wide range of academic disciplines. The exact composition is listed in the project membership section of this report.

The format for the project was a series of three all-day workshops spaced at one-month intervals. The participants were divided into four groups each of which consisted of faculty from all four schools and a diversity of disciplines.

Prior to each workshop, each participant was provided with materials developed fr n the previous session and a description of the forthcoming session, complete with a statement of the specific tasks to be accomplished. At the mid-point and end of each workshop each group gave a progress report and the day's activities were summarized.

In the interval between the workshops, the project director met with the Pensacola Junior College members on a group-by-group basis to review their group's work and to assimilate the information for the next session.

The last session dealt with confirming what seemed to be the general conclusions and developing the project recommendations. Following the final workshop, a schematic draft was circulated to all of the participants for reaction. The final report represents the consensus of the participants.

An evaluation rendered by the participants at the close of the last workshop indicated that the process was effective.

86 percent agreed that the objectives were clear

96 percent agreed that the task assignments for each workshop contributed directly to the objectives

75 percent agreed that the time allowed for each of the three workshops was appropriate for the assignment

71 percent agreed that the objectives were met

100 percent agreed that the mix of participants (discipline and school) within the groups contributed to its effectiveness

IS ESTABLISHING MINIMUM COMPETENCIES WORTHWHILE?

Defining the basic skills and testing for competence is valuable.

An assurance of competence will increase the probability of a more orderly and efficient progression through the upper-division curriculum.

The long-term benefit of establishing basic skill competencies will be the progressive increase in the level of competence.

Establishing minimum competencies should counter the deterioration of quality experienced during the past decade, and should be a step in the direction of higher standards.

A more positive relationship between the public and higher education should be produced by the establishment of, and the attention given to, required competencies in the basic skills.

WHAT IS THE VALUE OF COMPETENCY TESTING?

The graduates of Florida's higher education have demonstrated by their contributions to the state and their communities that the educational system has been generally effective. If the time and cost requirements are analyzed closely, the citizenry might ask if the process has been as efficient as it should have been.

Testing for minimum competencies in the basic skills of communication and computation should increase the efficiency, effectiveness, and quality of the educational process.

WHAT ARE THE NEGATIVE EFFECTS OF TESTING?

Testing may encourage academically weak students to attend non-testing schools in the adjacent states or may encourage them not to attend college at all. This is not perceived to be a significant problem.

The concern of "teaching to the test" is ill founded but will always exist. The definitions of the competencies will encourage teaching to the test objectives which is a positive activity. This is distinctly different from teaching to the test items.

If the lowest common level of basic skill competence is the criterion, the competence level may be too low to be of significant value and may indeed be embarrassing to college faculty.

The public may be appalled by the admission that students exiting the sophomore year are expected to have such low-order competencies. This concern can be reduced by demonstrating that the upper-level competencies are a logical and progressive extension of the high school competencies.

The financial impact could be serious if the testing requirement is not specially funded at the outset. The funding system, which is based upon costs of operation, requires two years before new program costs are naturally reflected in the system needs and subsequent allocation.

Testing may be construed by some to be a covert method of denying equal access/equal opportunity.

IS TESTING A THREAT?

Generally, faculty do not view exit/entry as a threat or a challenge of their effectiveness.

The public pressure for competence in the basic skills has a potential for promise or for peril. There is a promise in the focus on learning. However, a narrow concentration on low-level skills or an attempt to apply simplistic solutions to complex problems could prove to be perilous.

If the objectives are as broad and the requirements as high as many would desire, then a politically unacceptable number of students would fail. However, narrowing the objectives and lowering the requirements could seriously restrict teacher expectations and student aspirations.

IS TESTING THE BEST WAY?

The basic skills competencies of the entry level communication and computation courses could be standardized statewide. But whereas the goal of specified minimal competencies is mandated, there is no correspondent necessity for standardizing course content.

Passing the course should be documentation that the competencies have been achieved, but such is not always the case.

Standardizing the content does not mean that the methodology is standardized.

Even with standardized basic skill content, testing would still be required for proof of attainment, although not necessarily with expensive, formal standardized tests.

The assessment of basic skills requires reliable and relevant measurement devices. Prior to the selection or development of such measurement tasks, an unambigious statement of expected outcomes of the educational experience must be produced. Standardized tests may be appropriate for some purposes, but they should not be perceived to be a panacea for assessing basic skills.

WHAT TYPE OF TESTING SHOULD BE UTILIZED?

The standardized norm-referenced tests which are widely used today for assessing and reporting student achievement are not completely appropriate for evaluating achievement of basic skills. The norm-referenced testing model was developed in the first half of this century when a principal function of testing was to sort students.

Basic skills programs are usually designed with the expectation that ultimately most students will achieve most of the competencies. However, for norm-referenced tests to perform the sorting function, they must contain a large number of items which half or more of the students will miss.

Criterion-referenced testing which results in a "yes or no" for each competence is preferred to norm-referenced testing which compares a student's general performance against a larger group.

Criterion-referenced testing generally identifies specific deficiencies, whereas norm-referenced usually requires retesting to identify specific deficiencies.

Criterion-referenced testing provides a logical basis for remediation. Norm-referenced examinations can serve this function if sub-scores are included.

Deficiencies in specific competencies are frequently easier to defend than an arbitrarily chosen percentile cut-off.

IS IT POSSIBLE FOR A STUDENT TO HAVE PASSED THE BEGINNING LEVEL COMMUNICATION AND COMPUTATION COURSES AND YET NOT PASS THE UPPER LEVEL COMPETENCIES TEST?

The answer appears to be Yes. Not only is it possible, but to a limited extent it is probable. Reading, for example, is not necessarily taught in the basic courses, and is therefore unmeasured and unmonitored. Computation competencies decline rapidly when practice is discontinued. Other reasons range from test anxiety to carelessness, with each needing an independent evaluation to determine exact cause.

SHOULD COLLEGE TRANSFER CREDIT BE GRANTED FOR REMEDIAL WORK?

The opinions were varied. Whereas most participants agreed that remediation which was clearly of a sub-collegiate level should not count toward the degree, disagreements arose relating to the total content within a remedial course. What part was clearly sub-collegiate, and what part was collegiate? Which is the emphasis of the course?

The State Affirmative Action Plan strongly recommends that credit be given to remedial courses and programs.

RECOMMENDATION: ONE

THE BASIC SKILLS OF COMMUNICATION AND COMPUTATION ARE READING, WRITING, AND MATHEMATICS.

The upper-level competencies should be built upon but should exceed the high school competencies. One would expect an orderly and progressive up-grading of these minimum competencies as the years pass.

Sentiment was expressed that oral communications, speech, should also be included as a requisite basic skill. The logistics of a speech test being administered to large numbers of students, and the subjectivity of evaluation, forced the decision that oral communications was impractical.

The validity of an English test would be increased by the inclusion of a "writing sample." The writing sample would, however, greatly increase the cost of the testing process because of the non-machinable grading.

RECOMMENDATION: TWO

THE BASIC SKILLS COMPETENCIES SHOULD BE THOSE WHICH ARE COMMON TO ALL PROGRAM MAJORS. ADDITIONAL COMPETENCIES MAY BE REQUIRED FOR SPECIFIC PROGRAM MAJORS.

The basic skills competencies should be the lowest level common to all program majors. The level would not guarantee success in every chosen major, but the lack of the competencies level would indicate an extremely low probability of success within any program area.

The basic skill competence would be necessary to gain entry into the upper division, but entry into specific program majors would be predicated upon additional requirements established for the program.

The public should have no difficulty maintaining the distinction between "basic skills" for all, "minimum skills" for a specific purpose, and "expanded skills" needed for various careers.

In the final analysis, the upper-division institution would be the determiner of the basic skill competencies for entry into the upper division.

RECOMMENDATION: THREE

THE COMPETENCIES WITHIN EACH OF THE THREE BASIC SKILLS CAN BE IDENTIFIED. THE PRINCIPAL PARTICIPANTS IN SUCH AN ACTIVITY SHOULD BE UPPER-DIVISION AND LOWER-DIVISION FACULTY MEMBERS REPRESENTING ALL DISCIPLINES.

The project participants were in strong agreement that competency levels can be defined.

Upper-division and lower-division faculty can work together effectively in defining the competencies.

A broad representation by discipline (including basic skill disciplines and program-major disciplines) is imperative to any meaningful dialog intended to establish minimal competencies.

The basic skills were agreed to consist of reading, writing, and mathematics, but the precise competency within each skill was a task beyond the scope of this project. Examples of competencies, however, were discussed and are found on the following page.

The reading competency level should optimally be the 14th grade; but, meanwhile, it should be no less than two grade levels beyond the average lower-division entry-level competence.

In one sample of approximately 1,000 first-term full-time college transfer students entering a Florida junior college, 56 percent were reading at the 12th grade level or higher.

The upper-division reading competency should be based upon empirical data captured at the entry into the lower division. The upper-division competence should be increased by a logical and attainable increment above that of the entry competence.

SUGGESTED BASIC SKILL COMPETENCIES: MATHEMATICS

1. Four basic arithmetical operations with integers, fractions, and decimals.
2. Solve percentage problems.
3. Solve elementary word problems.
4. Solve problem dealing with averages.
5. Solve problem dealing with interest, discounts, and tax.
6. Solve a simple linear equation.
7. Interpret a graph.
8. Round integers, fractions, and decimals.
9. Identify equivalencies.

SUGGESTED BASIC SKILL COMPETENCIES: ENGLISH

1. Write a well organized and developed expository paragraph.
2. Avoid sentence fragments.
3. Avoid incoherent sentence structure.
4. Avoid disagreement between subject and verb.
5. Avoid spelling errors.
6. Avoid comma splice.
7. Avoid fused sentences.
8. Use correctly the proper verb tense.
9. Punctuate correctly.
10. Capitalize correctly.
11. Order, subordinate, and classify information.
12. Use the apostrophe correctly.
13. Avoid disagreement between pronoun and antecedent.

RECOMMENDATION: FOUR

NO DISTINCTION SHOULD BE MADE BETWEEN EXIT AND ENTRY COMPETENCIES. THE BASIC SKILLS COMPETENCIES REQUIRED TO EXIT THE LOWER-DIVISION SHOULD BE EXACTLY THE SAME AS THOSE REQUIRED FOR ENTRY INTO THE UPPER-DIVISION.

The purpose of competence at the exit of the lower-division is to increase the probability of success at the upper-division. Therefore, the competencies needed for the upper-division should be attained prior to entry into the upper-division. Thus, exit and entry competencies are the same.

Unnecessary confusion would be created and unnecessary expenses incurred if two kinds of tests were utilized--one for exiting the lower-division and another for entering the upper-division.

RECOMMENDATION: FIVE

THE REQUIRED COMPETENCIES SHOULD BE STANDARDIZED WITHIN THE STATE UNIVERSITY SYSTEM AND THE COMMUNITY/JUNIOR COLLEGES, AND THE TEST INSTRUMENT(S) SHOULD BE THE SAME.

The basic skills should be the same statewide.

Testing should result in prescriptive measures for remediation.

Funding must be maintained for Compensatory Education with special "start-up" funding being provided.

RECOMMENDATION: SIX

THE TESTING FOR COMPETENCIES SHOULD BE DONE EARLY ENOUGH IN THE STUDENT'S PROGRAM TO PERMIT ADEQUATE OPPORTUNITIES FOR REMEDIATION IF SUCH IS INDICATED. REMEDIATION MUST BE AVAILABLE TO THOSE STUDENTS WHO ARE DEFICIENT IN BASIC SKILL COMPETENCIES.

If the purpose of testing for competencies is to provide the student with a reasonable expectation of success at the upper-division, then remediation must be provided in the areas of deficiencies.

The value of testing is negligble if no remediation action is taken.

Testing should be done early enough to allow remediation without an unnecessary disruption to the student's progress.

RECOMMENDATION: SEVEN

REMEDIATION OPPORTUNITIES SHOULD BE AVAILABLE AT THE LOWER-DIVISION AND AT THE UPPER-DIVISION, AND SHOULD BE PROVIDED TO THE STUDENT AT THE TIME A DEFICIENCY IS IDENTIFIED.

Remediation should be done at the earliest time and at the lowest level where need is detected, preferably under the direction of those who have had the most direct involvement with the initial instruction.

Although testing is preferred at the lower-division, basic skills remediation must be available at the upper division universities to accommodate transfer students who were not tested at the lower-division (primarily those who exited the lower-division prior to the beginning of Florida's testing program, and out-of-state transfers).

RECOMMENDATION: EIGHT

COMPETENCY IN THE BASIC SKILLS SHOULD BE AN ADEQUATE REQUIREMENT FOR THE ASSOCIATE DEGREE AND SHOULD BE AN ABSOLUTE REQUIREMENT FOR ADMISSION INTO THE UPPER-DIVISION.

Passing the test should not be based on a composite score, but competence-by-competence within each basic skill area.

Testing should apply to all students leaving the lower-division--those from the lower-division of universities as well as the junior college. Testing should also be administered to those students transferring into the upper division through non-traditional routes--early admission, CLEP, NCFA, etc.

The quality of the instructional program and the faculty is traditionally judged on the basis of the students' subsequent performance. No faculty wants ill-prepared or deficient students sent forward.

Consensus was not reached on the question of whether "special students" should be required to demonstrate basic skill competencies. Special students are generally non-degree seeking. Examples are as follows:

- **Vocational teachers seeking equivalency certificates.
- **Upgrading by college graduates.
- **Job skills improvement by non-graduates of college.

The AA is designed for university transfer; the AS is a two-year program designed for the graduate to obtain immediate employment. All associate degree graduates should be certified that they function at the minimum basic skills level. The public expects a certain level of literacy from any associate degree graduate regardless of his career/educational goal.

The transcript should indicate "competence met" as it presently does for "general education."

The question of "recency of competence" was discussed but no specific conclusion was reached. Is competency "once obtained; always maintained" or must competency be proven again after a certain time has elapsed?

RECOMMENDATION: NINE

SPECIAL FUNDING IS REQUIRED TO SUPPORT THE START-UP COSTS WITHIN THE JUNIOR COLLEGES AND THE UNIVERSITIES.

The current demand by the public for accountability by the schools for the learning of basic skills comes at a time when the financial resources available to the schools are severely restricted. Today, schools are hard hit by inflation. Furthermore, many school systems with stable or declining enrollments are faced with higher salary costs each year as their maturing faculty move up on the salary scale.

A testing program will not be without expense. This expense, if required to be absorbed by the junior colleges and universities, will necessitate a restructuring of priorities. Resources will be diverted away from the instructional program.

The junior college funding process is based to a large measure upon the total cost of instruction. If funds are not specifically provided for the testing program, the costs of testing would be absorbed within the existing budget and would never surface as such. The total costs would not increase, and the potential for ultimately receiving reimbursements for the testing process would be non-existent.

A suggested process for funding would be on a graduated scale based on the number, or the anticipated number, of students tested. The unit reimbursement would decrease with an increase in the number of tests to compensate for the economies of scale.

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